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Abstract

Objective: Older couples are likely to be confronted with health problems of both spouses and these health problems may negatively influence their marital satisfaction. The present study examined these possible negative effects using a dyadic perspective. **Method:** Data from 78 independently living older couples were analyzed using the Actor–Partner Interdependence Model (APIM). Health problems were modeled as a latent factor of functional disability, the number of chronic diseases, and self-rated health. The couple’s health context, that is, similarity or dissimilarity, was examined with an actor–partner interaction variable. **Results:** For wives, spousal health problems were negatively associated with their marital satisfaction, but only under the condition that their own health was relatively good. For husbands, neither own nor spousal health problems were associated with their marital satisfaction. **Discussion:** Future research focusing on older couples needs to consider the couple’s health context next to health at the individual level.

Keywords

health problems, marital satisfaction, older couples, dyadic data, actor–partner interaction

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Introduction

Research has generally given a positive view about marriages in late life. For instance, as compared with middle-aged and young couples, older spouses report higher levels of marital satisfaction (Bookwala & Jacobs, 2004; Henry, Berg, Smith, & Florsheim, 2007); they disagree less often and derive more pleasure from areas such as children and doing things together (Hatch & Bulcroft, 2004; Levenson, Carstensen, & Gottman, 1993), and marital interaction among older couples is less emotionally negative and more affectionate (Carstensen, Gottman, & Levenson, 1995). However, a potential threat for marital quality among older couples is the onset of chronic illness and a decline in physical health. Illness of one or both spouses is likely to affect the couple's homeostasis and it may force spouses to renegotiate the structure and content of their relationship (Burman & Margolin, 1992; Gagnon, Hersen, Kabacoff, & Van Hasselt, 1999; Lyons, Sullivan, Ritvo, & Coyne, 1995). Thus, changes in marital roles and responsibilities could negatively influence marital satisfaction among older spouses.

The impact of chronic illness on marriage is often examined from the perspective of spousal caregiving, thereby assuming a clear distinction between the patient and the caregiver. Although such a distinction is likely among most middle-aged couples, this could become more difficult among older couples in which both partners are confronted with health problems. Spouses then may become mutual carers to maintain their independency as a couple (Rose & Bruce, 1995). More recently, studies go beyond this patient-caregiver perspective and start to focus on the dynamics of the marital relationship in late life (Walker & Luszcz, 2009). In their review, Walker and Luszcz (2009) specifically selected studies with dyadic data of older couples. Based on nine studies, these researchers concluded that older couples seemed to be rather resilient against the negative impact of illness in maintaining high levels of marital quality. However, as Walker and Luszcz also pointed out, nearly all of these studies focused on one particular chronic illness, and therefore it is not clear whether the results could be generalized to how older couples deal with health problems more broadly.

The aim of the present study is to focus more broadly on the relationship between health and marital satisfaction with dyadic data of older couples in which no *a priori* distinction is made between the patient and caregiving spouse. By focusing on these older couples, this study differs from previous studies in two ways. First, a more general concept of health is used that accounts for comorbidity as well as individual differences in functional disability due to illness. Second, we examined health problems using a dyadic perspective such that the severity of both spouses' health problems is compared at the couple's level.

Actor and Partner Effects of Health Problems

When reviewing and examining the effects of health problems on marital satisfaction, the effects of one's own health problems are to be distinguished from those of spouse's health problems. The effects of one's own health problem are usually called *actor effects* and the effects of spousal health problems are usually called *partner effects* (Kenny, Kashy, & Cook, 2006). One needs dyadic data to be able to simultaneously examine these actor and partner effects; however, previous research provides a global picture of what is already known about these actor and partner effects among middle-aged and older adults.

With regard to the partner effects of health problems, studies have generally shown that spousal illness is related to lower levels of marital satisfaction. For instance, this negative partner effect is shown with vision impairment (Strawbridge, Wallhagen, & Shema, 2007), with poor and declining general health (Booth & Johnson, 1994; Yorgason, Booth, & Johnson, 2008), with the presence of chronic illness (Hafstrom & Schram, 1984), and with cancer (Couper et al., 2006; Fang, Manne, & Pape, 2001; Langer, Yi, Storer, & Syrjala, 2010).

With regard to the actor effects of health problems on marital satisfaction, evidence is rather mixed. Some studies observed no relationship for patients with cancer (Couper et al., 2006; Langer et al., 2010) and for women with chronic illness (Hafstrom & Schram, 1984). Other studies observed lower levels of marital satisfaction with poor general health (Kulik, 2002) and with vision impairment (Strawbridge et al., 2007), whereas two studies among chronic pain patients observed even higher levels of marital satisfaction with more pain symptoms (Bermas, Tucker, Winkelman, & Katz, 2000; Flor, Turk, & Scholz, 1987).

With regard to gender differences, studies have shown that the negative association between spousal illness and marital satisfaction is stronger for wives than for husbands. For instance, Strawbridge et al. (2007) observed that the negative partner effect of vision impairment was stronger for wives than for husbands. Also, Yorgason et al. (2008) observed that a decline of spousal health was more negative for wives than for husbands. Langer et al. (2010) observed that caregiving wives of cancer patients, but not caregiving husbands, reported a reduction in marital satisfaction over time. This gender difference corresponds with the broader literature that wives' well-being is generally more strongly influenced by spousal characteristics than husbands' well-being, because wives are more sensitive to communicative and other qualitative aspects of the marital relationship (e.g., Acitelli & Antonucci, 1994; Peek, Stimpson, Townsend, & Markides, 2006; Strawbridge et al., 2007).

In sum, findings of previous studies show evidence that spousal illness indeed is a threat for one's satisfaction with his or her marriage, while this is not so clear for one's own illness. In fact, studies that examined both partner and actor effects observed that spousal illness had a stronger negative effect on marriage than own illness (Kaufman & Taniguchi, 2006; Yorgason et al., 2008) or observed only a negative effect of spousal illness (Hafstrom & Schram, 1984; Langer et al., 2010). Moreover, studies have shown that the negative partner effect is stronger for wives than for husbands.

The Couples' Health Context: An Actor–Partner Interaction

As both partners within the older couple are likely to have health problems, it seems important to consider one's individual health at the couples' level. The severity of health problems can be quite different or can be similar between both spouses. This similarity factor might play an important role in the impact of illness on marital satisfaction. In other words, the effect of spousal health on one's marital satisfaction may depend on someone's own health and vice versa. Such an actor–partner interaction, for instance, would occur when spousal illness has a negative effect on marital satisfaction under the condition that one's own health is relatively good, while this negative effect of spousal illness does not occur when one's own health is relatively poor.

Theoretically, the negative impact of health problems on marital satisfaction is based on the assumption that illness can be considered a stressor that challenges the couple's homeostasis or balance in the relationship (e.g., Badr & Taylor, 2008; Burman & Margolin, 1992). Among couples confronted with lung cancer of one spouse, it appeared that marital satisfaction can be maintained when both partners take an active role in relationship-maintenance strategies such as communicating positively and sharing tasks (Badr & Taylor, 2008). Older couples who are confronted with complex health problems such as the consequences of stroke may succeed in maintaining their balance by restructuring marital roles and collaborative interaction, but the difficulties of caring may also result in marital conflict and frustrations (Radcliffe, Lowton, & Morgan, 2013). Considering relationship maintenance at the level of the older couple, it seems plausible to expect that maintaining a satisfied relationship will be more strongly challenged when both spouses' health problems are dissimilar than when they are approximately similar or in balance. When both spouses experience many health problems, they may be pulled together for each other's help to maintain their autonomy as a united couple (Radcliffe et al., 2013). Otherwise, when one spouse has many health problems and the other spouse has hardly any, it is likely that the affected spouse will become dependent on the healthier spouse, which may increase

marital distress. In line with this expectation, Walker and Luszcz (2009) concluded in their review that problems and frictions in older couples confronted with illness are often the result of imbalance in roles or contributions to the relationship.

The Present Study

As the present study focuses on older couples, we need a more general health concept that provides the possibility to compare the severity of various health problems. Three important measures of health frequently used in gerontological studies are functional disability, the number of chronic diseases, and self-rated health. These measures not only reflect different dimensions of health, but they are also strongly interrelated. Functional disability refers to limitations in the ability to perform activities of daily living (Lyons et al., 1995). Disability primarily results from chronic diseases, and the severity of disability is related to the number of chronic diseases (Fried, Bandeen-Roche, Kasper, & Guralnik, 1999). Chronic diseases are important predictors of poor self-rated health, particularly among older adults (Galenkamp, Braam, Huisman, & Deeg, 2011; Molarius & Janson, 2002). Self-rated health can be considered to summarize diverse dimensions of the broader health status concept. Krause and Jay (1994) showed that among older adults, self-rated health generally referred to health problems and physical functioning. In the present study, we will use these three different health measures as indicators of one latent health factor.

Using this latent health factor, this study will simultaneously examine actor, partner, and actor–partner interaction effects of health on marital satisfaction. Based on findings of prior studies, we have two hypotheses. First, spousal health problems are negatively associated with one's own marital satisfaction (i.e., negative partner effects) and this negative partner effect is stronger for wives than for husbands. Second, a negative effect of health problems is more likely when both spouses' health problems are dissimilar than when they are quite similar. We have no clear expectations about the effects of own health problems, because the literature is inconsistent, but we will explore them.

Method

Participants

Data used for this study were collected in the context of the study "Care"; this study is a side-study of the Longitudinal Aging Study Amsterdam (LASA; Huisman et al., 2011). LASA is an ongoing study, which focuses on the

autonomy and well-being of older persons in the Netherlands. In 1992-1993 (T1), interviews were conducted with 3,107 respondents in the context of this LASA study. A stratified random sample of older men and women (aged 55-85 years) was drawn from the population registries of three geographic areas of the Netherlands. These three regions can be taken to represent differences in religion and urbanization in the Netherlands. The oldest people, and particularly the oldest men, were overrepresented in the sample.

Data collection for the Care-study took place in 2000-2001. The study sample consisted of physically impaired, independently living older adults ("anchor respondents") and their family members. Anchor respondents for the Care-study were selected on the basis of the second LASA follow-up (T3, wave 1998-1999; $N = 2,076$). Selection criteria were (1) a full interview at the second follow-up and an interview at the first follow-up; (2) living independently and still living in the geographical research areas of LASA after the second follow-up; (3) physical impairment as indicated by (a) at least some difficulty with one or more activities of daily living, *and* (b) at least one chronic disease, *and* (c) receiving any help with personal care or household chores; (4) having sufficient cognitive abilities to be able to do a face-to-face interview (Mini-Mental State Examination [MMSE] ≥ 24); and (5) not deceased and no refusal after the second follow-up. This selection consisted of 158 respondents who were living with a partner, 16 respondents whose partner was living outside the household, and 180 respondents not having a partner.

All 158 selected respondents living with a partner were approached to participate in the Care-study, and 139 respondents participated. Reasons for not participating were death ($n = 1$), not living independently anymore ($n = 3$), not eligible due to insufficient cognitive or physical abilities ($n = 5$), not eligible because the partner was also respondent ($n = 3$), and refusal ($n = 7$). At the time of the Care-study, 130 of the 139 participating respondents were still living with their partner, because in the meantime, 7 respondents had lost their partners and 2 partners had moved into residential care.

Not all partners of the 130 respondents were approached to participate in the Care-study due to restrictions in time and money. Partners of respondents without children ($n = 7$) and partners of another 21 respondents were excluded; the geographic distribution was taken into account when making the selection for this exclusion. Of the remaining 102 partners, 13 were not approached because the respondents did not provide consent to approach their partners, 6 partners refused, and 5 partners were ineligible due to not sufficient cognitive abilities. This resulted in a study sample of 78 couples.

All partners were interviewed within 1 month after the anchor respondent was interviewed. All partner relationships were heterosexual and all but 2 of

the 78 couples were married with their partners. The 76 married couples had been married for an average of 49.2 years ($SD = 8.4$, range = 14.9-67.7 years). The two cohabiting couples had a relationship for 13.8 and 4.9 years. We performed analyses with and without these cohabiting couples and results were similar; therefore, we retained them in the study sample. For reasons of simplicity, we will use the terminology of the marital relationship for these cohabiting couples.

The average age of husbands was 77.1 years ($SD = 6.8$) and those of wives was 74.8 years ($SD = 7.1$). The average number of years of education was 9.5 ($SD = 3.3$) for husbands and this was 8.1 ($SD = 2.7$) for wives. Nearly all members of the couple (97%) had no paid job at the time of the Care-study. Data about ethnicity were available for the anchor respondents, but not for their partners; all but 1 of the 78 were born in the Netherlands and had Dutch nationality. All but 4 of the 78 couples were living without other persons in the household. Analyses with and without these 4 couples showed similar results, so we retained them in the study sample.

Measurements

Marital satisfaction was measured with six items. These items were selected from the 20 items of the Marital Satisfaction Questionnaire for Older Persons (MSQFOP; Haynes et al., 1992) that assessed one's satisfaction with specific areas of the marital relationship. The six selected items had the highest factor loadings on the Marital Satisfaction Scale Score. Respondents were asked to indicate their current level of satisfaction or dissatisfaction with the following items: "The amount of consideration shown by my spouse," "The way disagreements are settled," "How decisions are made in my marriage," "The day-to-day support and encouragement provided by my spouse," "My spouse's overall personality," and "The degree to which my spouse motivates me." Answer categories were very dissatisfied, dissatisfied, a little dissatisfied, satisfied, and very satisfied. Item scores were summed and ranged from 0 (*very dissatisfied*) to 24 (*very satisfied*). Cronbach's alpha was .79 for husbands and .93 for wives.

Functional disability was measured with six items. These items assessed whether they could perform activities of daily living (walk up and down stairs, walk for 5 min outdoors without resting, sit down and stand up from a chair, dress and undress, use own or public transportation, cut own toenails). The five possible answers were without difficulty, with some difficulty, with a great deal of difficulty, only with help, and not at all. Items scores were summed and could range from 0 to 24, with higher scores indicating more disability. Cronbach's alpha was .85 for husbands and .76 for wives.

The number of chronic diseases was determined by asking the respondents whether they had any of the following diseases: cardiac disease (including myocardial infarction), peripheral atherosclerosis, stroke, diabetes mellitus, chronic nonspecific lung disease (asthma, chronic bronchitis, or emphysema), cancer (malignant neoplasms), and arthritis (rheumatoid arthritis and osteoarthritis). Answers were coded as “no” or “yes.” The number of diseases was computed by calculating all the specific diseases reported to be present, so that scores could range from 0 to 7.

Self-rated health was measured with one single item: “How is your health in general?” The five possible answers were excellent (1), good (2), fair (3), not so good (4), and poor (5).

Procedure

The analyses were performed using a two-step procedure. In the first step, we conducted a confirmative factor analysis (CFA) with dyadic data to check whether the latent health factor had the same meaning for husbands and wives (Kenny et al., 2006). In the second step, the effects of health problems on marital satisfaction were examined by estimating the Actor–Partner Interdependence Model (APIM; Kenny et al., 2006). Both steps were performed by Structural Equation Modeling (SEM) using AMOS, because SEM provides the possibility to model nonindependence between husbands and wives by making the dyad as the unit of analysis. Moreover, SEM provides the possibility to directly test whether specific paths are equal between husbands and wives by constraining these parameters to be equal.

The CFA for dyadic data in the first step examined whether the three health measures (i.e., functional disability, the number of chronic diseases, and self-rated health) could be considered as indicators of one latent health factor that was invariant between husbands and wives. If so, then factor loadings of the three health indicators could be constrained to be equal. Also, it was examined whether the factor scores should be computed in the same way for husbands and wives, so that these factor scores have the same unit of measurement. This is necessary to be able to compare the effects of husbands and wives in the analyses of APIM model. Therefore, we fitted a CFA in which all covariances (for possible nonindependence) were fixed to zero and all variances were set equal between husbands and wives. Individual factor scores were calculated by multiplying factor score weights (provided by AMOS) with the raw data.

In the second step, we used the estimated factor scores of husband’s and wife’s health problems of the first step as observed predictor variables. The basic APIM model with husband’s and wife’s health problems as predictor

variables was extended with the interaction between those variables. This actor–partner interaction term predicts whether the actor effect is dependent on the partner effect and vice versa. By testing this actor–partner interaction, it is examined whether similarity or dissimilarity between health problems at the couples level is an important predictor for one’s marital satisfaction. To compute this interaction, the individual factor scores were centered around their grand mean and the actor–partner interaction variable was computed by multiplying those centered factor scores (see Kenny & Cook, 1999). Following the procedure for the chi-square difference test, we tested whether the effects of husbands were different from that of wives by constraining the parameters to be equal. A high discrepancy in model fit of the constrained model as compared with the unconstrained model indicates that the effects of husbands differ significantly from those of wives.

There were two reasons to analyze the measurement model (CFA) apart from the structural model (APIM). The first reason was that individual factor scores are needed to compute the interaction variable between husband’s and wife’s health problems (i.e., the actor–partner interaction). The second reason was to avoid a complex model because of the small sample size of 78 dyads. By doing so, the ratio of sample size to estimated parameters in the CFA varied between 5:1 and 13:1 for the unconstrained and fully constrained model, respectively. This ratio is acceptable according to the rule of thumb for SEM models (i.e., at least 5:1; see Bentler & Chou, 1987). For the APIM model, a SEM analysis with solely observed variables is nothing more than a constrained set of multiple regression equations, and the sample size requirements for ordinary regression analysis do apply (see Kenny & Cook, 1999). In our analysis of the APIM model, there were 78 cases and three predictor variables (actor’s health, partner’s health, and the actor–partner interaction), which is sufficient according to usual rule of thumb for multiple regression (i.e., a minimum of 15 cases per predictor). The model provides enough power to detect a moderate effect.

Results

Table 1 provides descriptive information about the study sample. There were no gender differences in the mean scores of functional disability, the number of chronic diseases, and self-rated health. Both husband and wives, on average, experienced some difficulty with activities of daily living, had about 1.5 chronic diseases, and reported moderate levels of self-rated health. Analysis of the correlations between these health indicators showed that they were all positive; for husbands, they varied between .50 and .60, and for wives, they varied between .25 and .34. Age was not associated with any health indicator. Husband’s and wife’s age were strongly correlated ($r = .87, p < .001$).

Table 1. Characteristics of the Study Sample by Gender ($N = 78$ couples).

	Husbands				Wives				<i>t</i>
	Minimum	Maximum	<i>M</i>	<i>SD</i>	Minimum	Maximum	<i>M</i>	<i>SD</i>	
Functional disability (0-24)	0	20	4.3	4.9	0	20	5.0	4.7	-0.8
Chronic diseases (0-7)	0	5	1.5	1.1	0	3	1.4	0.9	0.2
Self-rated health (1-5)	1	5	2.6	1.1	1	4	2.6	0.8	-0.3
Marital satisfaction (0-24)	12	24	20.1	2.5	0	24	18.4	4.5	3.3**

Note. *t* values are based on paired-samples *t* tests.

** $p < .01$.

Mean scores of marital satisfaction indicate that both husbands and wives were rather satisfied with their marriage, though husbands reported slightly higher levels of marital satisfaction than did wives. This gender difference in marital satisfaction is consistent with findings of previous studies that older husbands generally report higher levels of marital satisfaction and more positive marital interactions than do older wives (e.g., Bulanda, 2011; Carstensen et al., 1995; Kaufman & Taniguchi, 2006; Kulik, 2002). The correlation between husband's and wife's marital satisfaction was .29 ($p < .01$).

The Measurement of Health: A Latent Construct

To obtain one global health measure, we conducted a CFA with functional disability, the number of chronic diseases, and self-rated health as indicators of one latent factor. Results of this analysis confirmed that these health measures could be considered indicators of one factor. The basic factor model for dyadic data had a good fit with the data, $\chi^2(5) = 5.5$, $p = .35$; comparative fit index (CFI) = .99; root mean square error of approximation (RMSEA) = .04. Further analyses showed that this latent factor had the same meaning for husbands and wives, because constraining the factor loadings improved the fit of the model, $\chi^2(7) = 7.9$, $p = .35$; CFI = .99; RMSEA = .04. Finally, results of a set of analyses showed that the factor scores could be computed in the same way for husbands and wives. The fit of the model improved when all covariances were fixed to zero and all variances were set equal between husbands and wives. Only constraining the variances of the latent factor itself did not improve the model fit. The fully constrained factor model had a acceptable fit, $\chi^2(15) = 20.4$, $p = .16$; CFI = .93; RMSEA = .07, and we used

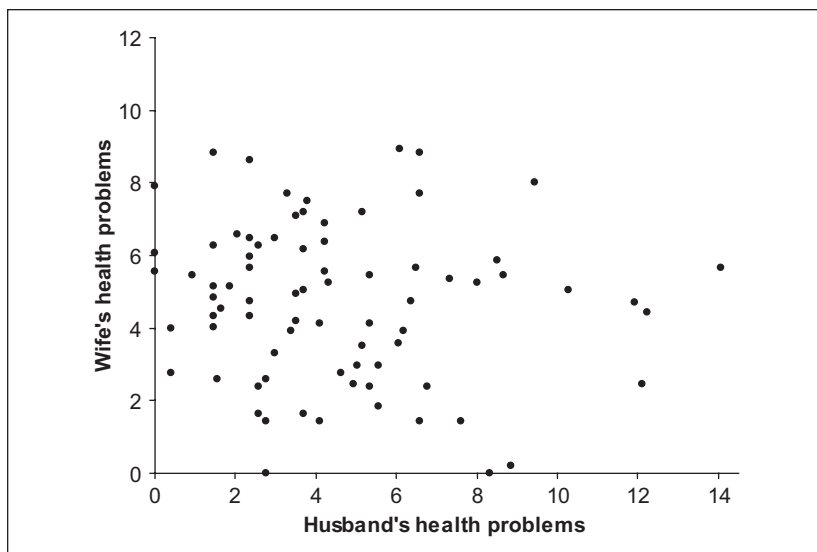


Figure 1. Scatter plot of the couple's factor scores on the latent health construct ($N = 78$ couples).

this model, because we aimed to compare actor and partner effects for husbands and wives in the APIM model. Factor loadings were .64, .62, and .72 for functional disability, the number of chronic diseases, and self-rated health, respectively. Based on these factor loadings, we computed individual factor scores and called this latent factor “health problems.”

Figure 1 shows the distribution of both spouses' health problems in a scatter plot. A score of zero indicates that the older spouse had reported no functional disability *and* no chronic disease *and* an excellent self-rated health. Because of the selection procedure of the study sample, a factor score of zero was only possible for the partner. The average scores of the latent health construct were 4.5 ($SD = 3.0$) and 4.7 ($SD = 2.2$) for husbands and wives, respectively. A factor score of 4.6, for instance, indicates that one reported to have some difficulty with nearly all activities of daily living, *and* one chronic disease *and* a fair self-rated health.

Health Problems and Marital Satisfaction

To examine our hypotheses about the effects of health problems on marital satisfaction, we centered husbands' and wives' factor scores of health problems on their grand mean ($M = 4.6$) and computed an actor-partner interaction

Table 2. Parameter Estimates of the APIM Model to Predict Husband's and Wife's Marital Satisfaction ($N = 78$ couples).

	Husbands		Wives	
	<i>B</i>	<i>p</i>	<i>B</i>	<i>p</i>
Model 1				
Actor's health problems	-0.00	.99	0.31	.17
Partner's health problems	-0.16	.17	-0.29	.07
R^2	.02		.07	
Model 2				
Actor's health problems	-0.01	.95	0.26	.23
Partner's health problems	-0.16	.22	-0.33	.03*
Actor-partner interaction	0.03	.50	0.25	.00**
R^2	.02		.18	

Note. Constraining parameters of Model 2 to be equal between husbands and wives significantly reduced the fit of the model, $\chi^2(3) = 9.3$, $p = .03$; root mean square error of approximation (RMSEA) = .17; comparative fit index (CFI) = .63. The correlation between the error terms of husbands' and wives' satisfaction was .32 ($p < .01$) in Model 2. APIM = Actor-Partner Interdependence Model.

* $p < .05$. ** $p < .01$.

term. Then, we conducted an analysis of the APIM model with (Model 2) and without (Model 1) the actor-partner interaction term. Table 2 presents the estimates of these models. Results of Model 2 showed that the actor-partner interaction was significant for wife's marital satisfaction. Next, we tested whether the actor, partner, and actor-partner interaction effects were different between husbands and wives by constraining the effects of husbands and wives to be equal. Results of this analysis showed that the fit of the model was significantly reduced, $\chi^2(3) = 9.3$, $p = .03$; RMSEA = .17; CFI = .63; this indicated that the effects of husbands and wives were different.

Figure 2 illustrates the estimated effects; therefore, the scores of the first and third quartile were entered into the regression equations. The score of the first quartile (which corresponds with a score of 2.6 in Figure 1) indicates that one had reported to have some difficulty with only *one* activity of daily living, *and* one chronic disease *and* a good self-rated health. The third quartile score (which corresponds with a score of 6.2 in Figure 1) indicates that one had reported to have a great deal of difficulty with many activities of daily living, and two chronic diseases and a fair self-rated health. For husbands, results showed that none of the predictors were associated with their marital satisfaction. However, for wives, the significant actor-partner interaction indicated that more spousal health problems were related to less marital

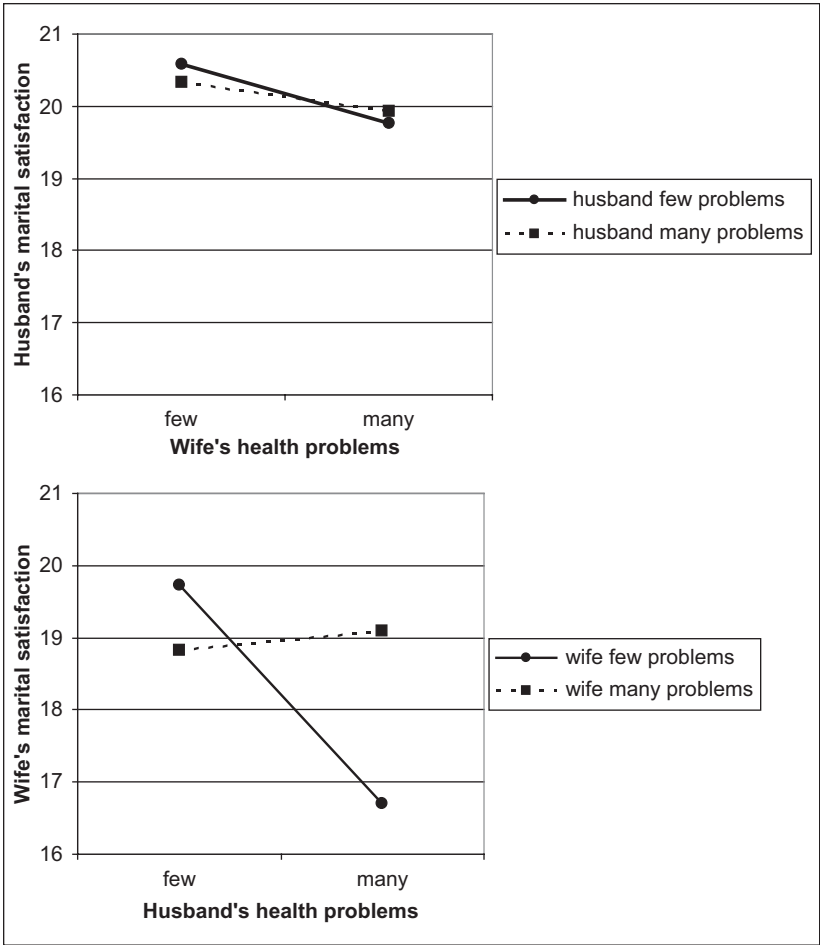


Figure 2. Husband's and wife's marital satisfaction as predicted by own and spousal health problems ($N = 78$ couples).

satisfaction under the condition that their own health was relatively good. The R^2 indicates that 18% of the variance in wives' marital satisfaction can be explained by both spouses' health problems and their interaction.

Turning to our hypotheses, the results do support them both, but in a specific way. With regard to our first hypothesis that spousal health problems are negatively related to one's marital satisfaction and that this negative effect is stronger for wives than for husbands, it appeared that this negative partner effect was only found for wives. With regard to our second hypothesis that a

negative effect of health problems is more likely when health problems of both spouses are dissimilar, it appeared that a negative partner effect was only found when the wife had less health problems than her husband. We had no clear expectation with regard to actor effects, because prior evidence was rather inconsistent. Results of the present study showed no actor effects for both husbands and wives.

Discussion

This aim of the present study was to examine the association between health problems and marital satisfaction among older couples in which both spouses are likely to be confronted with health problems. Health problems were modeled as a latent health factor and someone's own health was considered in the context of his or her spouse's health. Results showed that the couple's health context played an important role in the association between health problems and marital satisfaction in late life. Also, results revealed a clear gender difference. For wives, spousal health problems were negatively associated with marital satisfaction, but only under the condition that their own health condition was relatively good. For husbands, neither own nor spousal health problems were related to their marital satisfaction, regardless of the couple's health context.

Results of the present study confirm our first hypothesis that spousal health problems are negatively related to one's marital satisfaction. Also, results confirm our expectation that this negative partner effect is stronger for women than for men. These results are in line with prior research that showed a negative effect of spousal health among middle-aged and older adults (e.g., Strawbridge et al., 2007; Yorgason et al., 2008). In addition, studies have shown that this negative partner effect is particularly valid for wives (e.g., Langer et al., 2010). The present study added the couple's health context as a new factor to this type of research by focusing on a dyadic perspective. We hypothesized that marital distress would be more likely when both spouses' health problems are dissimilar than when they are quite similar or in balance. Results confirmed this hypothesis, because wife's marital satisfaction was only negatively associated with husband's health problems when wife's own health condition was relatively good.

An issue that comes up concerns the gender difference in the relationship between health and marital satisfaction. Previous studies already pointed to a stronger negative partner effect for wives as compared with husbands. An explanation for this gender difference is that wives are more sensitive to the more qualitative aspects of the marital relationship such as the exchange of social support and marital distress than are husbands (Acitelli & Antonucci,

1994; Kiecolt-Glaser & Newton, 2001; Schmitt, Kliegel, & Shapiro, 2007). In addition, Pillemer, Hatfield, and Sprecher (2008) found that spousal illness often make older women aware of issues of unfairness in their marriage, and evidence exists that perceived unfairness is particularly related to wives' marital happiness (Ward, 1993). Yet, the present finding that husband's marital satisfaction was unrelated to health does not mean that older husbands are insensitive for the effects of health problems with respect to other aspects of well-being. For instance, in a previous study, we found that older married men are vulnerable for social loneliness when their wives suffer from disability (Korporaal, Broese van Groenou, & Van Tilburg, 2008).

Another discussion point concerns the effects of someone's own health on their marital satisfaction (i.e., actor effects); our results showed no significant effects and evidence of prior research is mixed. The question could be raised as to why we did not observe a negative actor effect. An explanation might be that someone's own health problems put strain on the marital relationship, but that this strain works out differently for both partners of the couple. Possibly, own health problems can make someone feel more responsible for this marital distress. Spouses who have more health problems than their partners may feel dependent and may focus on the positive aspects of their marital relationship (Burman & Margolin, 1992), by which marital conflicts are less likely to result in a negative evaluation of the partner. This explanation is supported by a study of Flor et al. (1987) who actually observed a positive actor effect: Patients with more pain symptoms were more satisfied with their marriage. Flor et al. showed that this positive association was explained by spouses' solicitousness and the ability to discuss their health problems with their spouses.

A third issue concerns the relevance of considering health problems in the couples' context. Given the situation that one partner of the older couple has some or more health problems (as it was in our selection procedure), it appeared to be very likely that the other partner also had some health problems. In our study sample of 78 couples, merely 5 partners had no problems, while 22 partners had more health problems than the anchor respondent. Increasing longevity will make it more relevant to consider the couple's health context when focusing on older couples. This implies that researchers need to elaborate on how to operationalize health at the couple's level. Our data confirmed a simple latent health factor based on three health indicators, but future studies have to establish whether this simple factor is the best option to compare the health condition of older partners.

The present study is partly linked to the literature on spousal caregiving, because a patient versus caregiver situation is most likely when there is a relatively large difference between the health conditions of both partners (i.e., dissimilarity). Our finding that the negative effect of spousal health

problems was only valid for wives under the condition of dissimilarity fits to the gender differences in the literature on spousal caregiving. This literature has commonly shown that older caregiving wives report higher levels of stress and burden than do older caregiving husbands (e.g., Pinquart & Sörensen, 2006; Wallsten, 2000). However, results of the present study also show another perspective: The levels of husband's and wife's marital satisfaction were high when both partners had many health problems. This finding challenges researchers in the field of spousal caregiving to broaden their focus on these couples and to examine whether these high levels of marital satisfaction can be explained by a pattern of mutual caring. Moreover, we need to acknowledge the older spouses' larger social context and the question arises whether and how informal and formal caregivers influence the older couple's autonomy and collaborative interactions. Among couples coping with cancer, Badr and Taylor (2008) observed that an increased reliance on social networks resulted in a greater marital adjustment for both the patient and healthy spouse. Future research that links this dyadic perspective of older couple's health with the larger broader caregiving context can provide more insight in how older couples can maintain a satisfying marital relationship.

A limitation of this study concerns the relatively small sample size of 78 couples (156 individuals). This sample size is mainly determined by the criterion that the anchor respondent had to have some level of physical impairment. However, time and money constraints further reduced the sample size by excluding respondents without children, and by excluding another 21 out of 123 respondents. Refusals and ineligible partners led to the final sample size. Nonetheless, a strength of this sample is the relatively large variance in health problems across and within couples, by which the actor-partner interaction could be examined. Still, the results need to be interpreted carefully. Future research with larger samples of older couples has to confirm our findings about the measurement of health and about its link with marital satisfaction.

Another limitation concerns the use of cross-sectional data. We assumed a negative impact of health problems on marital satisfaction given our focus on older spouses. It seems reasonable to choose for this direction given the average age of about 75 years, but the results can only be interpreted as an association. In general, the causal order between health and marriage can be assumed to be two directional (Burman & Margolin, 1992), and research with longitudinal data has to confirm whether the effects of health problems on marital satisfaction among older couples are stronger than those in the reversed direction.

A third limitation is that we did not study the effects of poor cognitive health, because respondents and partners were excluded when they had no

sufficient cognitive abilities to take part in the study. To examine these cognitive health problems with dyadic data will be difficult, although a recent study showed that this is possible with early stage dementia (Clare et al., 2012). Studies about the impact of poor cognitive health has shown that balance and equity considerations are important issues among couples where one partner has dementia (Quinn, Clare, & Woods, 2009). In addition, research about the impact of spousal mild cognitive impairment on the healthy partner has shown a similar gender difference as with our measure of physical health: Spouse's lower cognitive functioning was negatively associated with wife's well-being and marital quality 5 years later, whereas this effect was not found for husband's outcomes (Strawbridge, Wallhagen, Thai, & Shema, 2009). It will be a difficult but important task for future researchers to integrate measures of both physical and mental health, because older adults are likely to be confronted with problems in both aspects of health.

In conclusion, the present study has shown that older couples are rather satisfied with their marriage, though husbands reported slightly higher levels of marital satisfaction than wives did. Results showed that the couples' health context is an important factor in the link between health and marital satisfaction in late life. This finding directs future researchers to further elaborate on the concept of health to be able to compare both spouses' health condition. Also, the number of aging couples in which both spouses are confronted with health problems will increase due to the increased longevity, and this asks for more attention not only to these couples with regard to positive outcomes (e.g., high levels of marital satisfaction) but also to possible threats for other aspects of well-being.

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